

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

REC'D 05 MAR 2004



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Applicant's or agent's file reference sps.2025.pct.dk/ach	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB 03/00174	International filing date (day/month/year) 16.01.2003	Priority date (day/month/year) 18.01.2002
International Patent Classification (IPC) or both national classification and IPC E21B23/02		
Applicant SPECIALISED PETROLEUM SERVICES GROUP Ltd et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 06.08.2003	Date of completion of this report 03.03.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Diaz y Diaz-Caneja, Telephone No. +49 89 2399-7534 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/00174

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-15 as originally filed

Claims, Numbers

1-19 filed with telefax on 05.02.2004

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
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International application No. PCT/GB 03/00174

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 8-13

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 8-13

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-7, 14-19
	No: Claims	
Inventive step (IS)	Yes: Claims	5
	No: Claims	1-4, 6-7, 14-19
Industrial applicability (IA)	Yes: Claims	1-7, 14-19
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1) Reference is made to the following documents:

D1: GB-A-2 184 147

D2: US-A-2 323 027

D3: US-A-5 957 226

2) The application does not meet the requirements of Article 6 PCT for the following reasons:

Clarity:

- According to the requirements of Rule 11.13(m) PCT the same feature shall be denoted by the same reference sign throughout the application. This requirement is not met in view of the use of:

- "mating portion 44" (page 10, lines 23-24) and "meeting portion 44" (page 12, lines 24-25)

- page 11, lines 10-12, reads "the surfaces 46, 48 of the body 12 and sleeve 24 respectively" and should read "the surfaces 46, 48 of the sleeve 24 and body 12 respectively"

- "plug 64" (page 11, line 14) and "shoulder 64" (page 13, lines 1-2)

- Amended claim 16 reads "locating one or more further on the work string", and it seems that the word "tools" is missing between "further" and "on".

3) Each of D1/D2 discloses a downhole tool for (see PCT-Guidelines III, 4.8) location on a work string (page 2, lines 100-102 and item 66/2), the tool including an assembly (11/13) from the work string, and disengagable from the work string at a selected location in the well bore (see page 4, lines 107-110/see page 2, left column, lines 3-4 and item 24), and wherein the tool further includes retrieval means (see page 4, lines 48-50 and item 83/see page 2, left column, lines 61-62) to pick up the assembly on retrieval of the work string from the well bore.

Thus, the subject-matter of claim 1 is new. The only distinguishing feature is that the work string is operated by a hex drive. This feature appears to be a matter of normal design procedure for the skilled person, since the word "hex" means hexagonal shape.

Therefore, the subject-matter of claim 1 does not involve an inventive step (Art. 33(3) PCT).

Also D2 discloses a method of running a work string 2 in a well bore to operate more than one tool in one single trip, the method comprising the steps:

- a) locating a first tool on the work string;
- b) locating one or more further tools 3 on the work string below the first tool;
- c) running the work string into the well bore until the first tool reaches a selected location and at this location (see page 2, left column, lines 24-25 and 37-45);
- e) disengaging an assembly of the first tool from the work string at the selected location (see page 2, left column, lines 3-4);
- f) passing the work string beyond the assembly until the one or more further tools have reached desired locations and performed their functions (see fig. 2);
- g) removing the work string from the well bore (see page 2, left column, lines 61-62);
- h) picking up the assembly on the work string as the work string is retrieved (see page 2, left column, lines 61-62).

Thus, the subject-matter of claim 16 is new. The only distinguishing feature is that the work string is operated by a hex drive. This feature appears to be a matter of normal design procedure for the skilled person, since the word "hex" means hexagonal shape.

Thus, the subject-matter of claims 1 and 16 does not involve an inventive step (Art. 33(3) PCT).

- 4) Each of D1/D2 discloses the additional features of claims:
- 2, 3 (see fig. 1)
 - 4 (item 23 only in D2)

Thus, the subject-matter of claims 1-4 does not meet the novelty requirement of Art. 33(2) PCT.

- 5) The additional features of claims 6-7, 14-15 and 17-19 are either known from the documents mentioned in the search report or comes within the scope of the knowledge of a skilled person.

Thus, these claims do not appear to contain any additional features which in combination with the features of any claim to which they refer, could form subject-matter which is new and involves an inventive step (Art. 33(2)-(3) PCT).

6) If the applicant files new clarified claims, following should be taken into account:

- Rule 6.3 (b) PCT: correct two-part form of independent claims 1 and 16 with regard to D1 and D2.
- Rule 6.2 (b) PCT.
- Rules 5.1 (a) (ii) PCT reference to the documents D1 and D2 and their disclosure.

The subject-matter of the independent claims should include some technical difference over the disclosure of documents D1 and D2, considered in combination, so as to permit a finding that that claim has inventive step over the prior art.

- Rule 5.1 (a) (iii) PCT: description in conformity with the new claims.
- Art. 34 (2) (b) PCT: The applicants are requested to identify in their reply those passages of the application as originally filed which form a basis for the amendments.

1 CLAIMS

- 2
- 3 1. A downhole tool for location on a work string, the
- 4 tool including an assembly operable from the work
- 5 string by a hex-drive system and disengagable from
- 6 the work string at a selected location in the well
- 7 bore, and wherein the tool further includes retrieval
- 8 means to pick up and engage the assembly on retrieval
- 9 of the work string from the well bore.
- 10
- 11 2. A downhole tool as claimed in Claim 1 wherein the
- 12 tool comprises a substantially tubular body upon
- 13 which is located the assembly.
- 14
- 15 3. A downhole tool as claimed in Claim 1 or Claim 2
- 16 wherein the assembly is a sleeve positioned on an
- 17 outer surface of the tool.
- 18
- 19 4. A downhole tool as claimed in Claim 3 wherein the
- 20 assembly is a milling sleeve.
- 21
- 22 5. A downhole tool as claimed in any preceding Claim
- 23 wherein the body includes a portion of an outer
- 24 surface having a plurality of longitudinally
- 25 extending planar sections arranged around a
- 26 circumference of the body, and the assembly includes
- 27 an inner surface, a portion of which has a plurality
- 28 of longitudinally extending sections matching those
- 29 of the body, such that when the body is rotated by
- 30 virtue of the work string being rotated, the assembly
- 31 is rotated also.
- 32

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- 1 6. A downhole tool as claimed in any preceding Claim
2 wherein the assembly includes a shoulder on an inner
3 surface thereof, the shoulder providing a ledge upon
4 which a portion of the body engages when the tool is
5 retrieved from the well bore.
6
- 7 7. A downhole tool as claimed in Claim 6, when dependent
8 on Claim 5, wherein the portion of the body is that
9 portion provided as a ledge by the plurality of
10 longitudinally extending planar sections.
11
- 12 8. A downhole tool as claimed in any preceding Claim
13 wherein the assembly is detachably coupled to the
14 body.
15
- 16 9. A downhole tool as claimed in Claim 8 wherein the
17 detachable coupling is by one or more shear pins.
18
- 19 10. A downhole tool as claimed in Claim 9 wherein the
20 assembly includes an outer shoulder, the outer
21 shoulder contacting a formation in the well bore to
22 cause the shear pins to shear and decouple the
23 assembly from the body thereby disengaging the
24 assembly from the work string.
25
- 26 11. A downhole tool as claimed in Claim 9 or Claim 10
27 wherein the shear pins include a constricted portion
28 positioned at a plane between the assembly and the
29 body.
30
- 31 12. A downhole tool as claimed in any one of Claims 9 to
32 11 wherein the body and the assembly include means

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1 for retaining sheared parts of the sheared pins to
2 prevent them from dispersing into the well bore.

3
4 13. A downhole tool as claimed in Claim 12 wherein the
5 means for retaining sheared parts of the shear pins
6 is by one or more pockets located in the body and the
7 assembly.

8
9 14. A downhole tool as claimed in any preceding Claim
10 wherein the tool includes a safety mechanism to
11 prevent premature decoupling of the assembly from the
12 body prior to the assembly reaching a selected
13 location in the well bore.

14
15 15. A downhole tool as claimed in Claim 14 wherein the
16 safety mechanism comprises a button mounted in a
17 first position to lock the assembly to the tool body,
18 the button having a face engageable with the selected
19 formation, whereupon engagement with a selected
20 formation at the selected location moves the button
21 from the first position to a second position,
22 disengaging the lock and wherein the selected
23 formation maintains the button in the second position
24 while the selected formation contacts the assembly
25 thereby disengaging the assembly from the work
26 string.

27
28 16. A method of running a work string in a well bore to
29 operate more than one tool on a single trip, the
30 method comprising the steps:

- 31 a) locating a first tool on the work string;
32 b) locating one or more further on the work string below
33 the first tool;

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- 1 c) running the work string into the well bore until the
2 first tool reaches a selected location;
3 d) operating the first tool via the work string by means
4 of a hex drive;
5 e) disengaging an assembly of the first tool from the
6 work string at the selected location;
7 f) passing the work string beyond the assembly until the
8 one or more further tools have reached desired
9 locations and performed their functions;
10 g) removing the work string from the well bore; and
11 h) picking up the assembly on the work string as the work
12 string is retrieved.

13
14 17. A method as claimed in Claim 16 wherein the assembly
15 is a milling assembly for milling and dressing a
16 polished bore receptacle and the selected location is
17 at the polished bore receptacle in the well bore.

18
19 18. A method as claimed in Claim 16 or Claim 17 wherein
20 the assembly is disengaged from the work string by
21 contacting the assembly with a formation in the well
22 bore and setting down weight on the work string.

23
24 19. A method as claimed in any one of Claims 16 to 18
25 wherein the assembly is picked up by the work string
26 by contacting a ledge on the work string with a
27 shoulder on the assembly.